

**Supplemental Material Table S1.** Sequences of primers used to amplify open reading frames of *T. castaneum* cys-loop LGIC subunits. Forward primers are on the top of each pair and reverse primers are on the bottom.

| Subunit          | 1 <sup>st</sup> PCR reaction                  | 2 <sup>nd</sup> PCR reaction                    |
|------------------|---|---|
| Tcas $\alpha$ 1  | atggagctgttgctcgcc +<br>ttacaactcctccggtagc   | cctttcatgggtgattttgg +<br>tcaacaacgcgcattttcttc |
| Tcas $\alpha$ 2  | atgatgtgggtggctg +<br>ttagaatctaattcaggtaga   | ttcggactgttttgcgg +<br>gttgtggctactgacg         |
| Tcas $\alpha$ 3  | atgaagagcttggtgggg +<br>taaagaactggcaaatatggg | tgtggatagtttagtgctc +<br>gcagtggtcgatgcata      |
| Tcas $\alpha$ 4  | atgcctccttctgccgc +<br>ctactgtggaggaggccc     | gagacgctgagagcctg +<br>gaacaaccgttagtggtgg      |
| Tcas $\alpha$ 5  | ttgatagttgtaatcctgtt +<br>agaggccgcgtcggttgc  | gagaatgtcaaggggacg +<br>gacttctgcataatatcgac    |
| Tcas $\alpha$ 6  | atggtccggagcgagca +<br>ctactgcacgattatgtgc    | tggcgctgctggccac +<br>gtggcgatgatcgtaac         |
| Tcas $\alpha$ 7  | atggacagtggcatgcag +<br>acgatacgtatgtgagg     | tgtcaattctactgcggc +<br>ccgagaacacgcactgcta     |
| Tcas $\alpha$ 8  | tttaataaaatttagttgttac +<br>gtggggatgtgtgtgcg | catgctgtttaatccactg +<br>ttcgtgagaggaatttcgc    |
| Tcas $\alpha$ 9  | atgggcattctaaatttttc +<br>taaggggtaaaccgcataa | ccttcagctgcgtcttgc +<br>aacaatcacgtagacgagg     |
| Tcas $\alpha$ 10 | atggcaaacatactgaggc +<br>tcacacggaataaactatgg | tggtgtgcggctttgca +<br>aaagtgtatccgatctatggc    |
| Tcas $\alpha$ 11 | tgtacttgtaaagtttacatg +<br>tacaacctcaaagcgccc | gtttaagttgtgtgtgg +<br>atctactggaaatcctcg       |
| Tcas $\beta$ 1   | atgtggacctggaccgc +<br>tatttgcgcggtaaatttc    | acagcggcttcatctcg +<br>attcgaagatgtgaggagc      |
| Tcas_RDL         | gggtgggtgtggccagc +<br>acttatcctcctccagaag    | gtgctgctggccctcg +<br>tagatgtccgctacaaca        |
| Tcas_GRD         | gaagcggtttcaactttgg +<br>tctcttggtcctcgacag   | gaccgttgcgtgcta +<br>tactctagaagctcgatcaa       |
| Tcas_LCCH3       | atgatcagcattatctacatc +<br>aacagccagtacccagca | catttcattgaggatattc +<br>agtaaccggaaaataatcc    |
| Tcas_GluCl       | gtatacacacacccctcatc +<br>ttacgactcttcggcctc  | gatagtgcacatcatccac +<br>tatattacattgaagagtgcg  |
| Tcas_HisCl1      | gcctccgtttcggttag +<br>taactcagcgaacattatcca  | tgggtgggtccgattacc +<br>aggacagtgaagagcaaag     |
| Tcas_HisCl2      | gtattctgtgtttactggc +<br>aacgtcgccagtacacaa   | ctgtgtatgatctcaaatgt +<br>actggtaatacagagagc    |

|            |   |   |
|------------|---|---|
| Tcas_pHCl  | atgggtcagccttggatg +<br>ttgtgagtcaagagttagtg  | ggctgctataacttctagtg +<br>aactgctgttagtgatagaag |
| Tcas_8916  | ttcgggcgggtttgtc +<br>cagtgactaaggcgagctc     | ttgttcggaagcttgagg +<br>cttcgtatccgcccattta     |
| Tcas_12344 | tgtgggttgtggtagacag +<br>acaacaatgtcgacttcta  | aagtacgacccctactca +<br>gtccagtagaaatcgcacaga   |
| Tcas_6927  | atgcagaaactcggttctc +<br>acaacatagacgaaagacca | atgtgcacaaggcccag +<br>tccagttggcgacctcg        |
| Tcas_7589  | tgctaaagtggcggttg +<br>gcgggaacacgattcttg     | ttgcctcggttatgactgg +<br>tttcctgtcgatccagttg    |
| Tcas_11340 | gactagtgcagttctagtc +<br>tatacaaacacccagtagag | agtgattgaaggagaagcc +<br>tgagtggaaagacaattcg    |

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